S
351.823
E13e
Jan. 1975

Montana State Library
3 0864 1005 0678 4

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

January 6, 1975

MONTANA ENERGY STATUS REPORT

Gas Rationing or a Gas Tax?

Recent news from Washington, D.C. and Vail, Colorado, indicates that some mandatory measures are to be employed to ensure conservation of gasoline. The two measures most often mentioned are gasoline rationing and an additional federal tax on the price of gasoline. One of these two measures is very apt to become a fact of life in the not too distant future.

Despite all the publicity and concern engendered by the Arab oil embargo, the nation has increased its consumption of Arab oil by some three percent over pre-embargo levels.

State Fuel Allocation Office Middle Distillate Program

During the year ending October 31, 1974, the State Fuel Allocation Office processed a total of 1,878 applications resulting in the allocation of 8,848,908 gallons of middle distillate petroleum products (gasoline, diesel, heating oil, etc.). Applications for allotted fuels averaged 156.6 per month and fuels granted averaged 702,909 gallons per month over the past year.

Fuels allocated for December, 1974, were 1,008,364 gallons, compared to 1,118,286 gallons for November -- a decrease of 109,922 gallons. Of the total fuels allocated, 611,154 gallons (61 percent of the total) were gasoline and diesel fuel for the retail trade sector. The wholesale trade and also the commercial sector each accounted for 12 percent of the fuels allocated for the month of December (123,658 gallons and 118,000 gallons, respectively).

The State Fuel Allocation Office has projected that the assigned gallonage will not fall below 500,000 gallons per month for the 1975 through 1977 fiscal years. As conservation measures take effect, it is possible additional state set-aside fuels will be utilized.

Tips for Energy Savers

The following was taken in part from an advanced draft of a new booklet entitled: "Tips for Energy Savers," to be published by the Federal Energy Administration.

During the late afternoon and early evening hours, the load on electric systems reaches its peak and to meet the rising load demands the electric utilities must start up inefficient generating equipment.

If everyone scheduled household chores so as to minimize energy use during the peak load hours, fewer inefficient generating units would have to be placed on line, thus reducing the utilities' daily fuel consumption.

Use Lighting Wisely

Lighting consumes over 16 percent of all electricity used in the United States homes. Careful use of lighting provides the homemaker another conservation opportunity.

-- Remove one bulb out of three and replace it with a burned-out bulb for safety. Replace others with bulbs of the next lower wattage, but concentrate light in reading and working areas and particularly where it is needed for safety. Reduction in electric cost should be about 4 percent. A concerned effort in this respect would result in the saving of 100,000 barrels of oil per day -- enough to light 16 million homes.

-- Turn off all lights when not needed. One 100 watt bulb burning for ten hours uses 11,600 BTU's, or a pound of coal, or one-half pint of oil.

-- Use higher lumen-per-watt lights. Lumen is the measure of light intensity. For example, a fluorescent light is more than three times as efficient as an incandescent bulb. Use fluorescent lights in the kitchen and bathroom. A single long tube is more energy efficient and economical than two shorter tubes. One 40 watt fluorescent light provides more light than three 60 watt incandescent bulbs, and can save you about $10 per year.

-- One large incandescent bulb should be used instead of several small ones.

-- Use long-life incandescent bulbs only in hard-to-reach places. They are less efficient than ordinary bulbs.

-- Use outdoor lights only when essential.

Our next issues will contain more electrical saving hints.

351.823
F1_e

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

FEB 10 1975

February 7, 1975

MONTANA ENERGY STATUS REPORT

STATE DOCUMENTS

55 MPH Speed Limit

A recent letter from Frank G. Zarb, Administrator, Federal Energy Administration, states the motoring public is increasingly disregarding the 55 m.p.h. speed limit established by law.

During the embargo of last winter, the speed limit was conceived as a means capable of saving a minimum of 200,000 barrels of oil per day and, more importantly, to save lives.

The Department of Transportation determined that last year 47 percent of all vehicles traveled at speeds in excess of 55 m.p.h. Studies by that department have shown that an average increase of as little as five miles per hour costs America 100,000 barrels per day, or half the potential savings in gasoline. Additionally, according to the National Highway Traffic Safety Administrator, fatalities increased 13 percent from March to August of 1974, as speeds began to climb to old levels.

Conservation Efforts in Industry

General Motors-Chevrolet-Livonia Michigan plant achieved a reduction in steam usage of 23 percent, natural gas 19 percent and electricity 3 percent during a year's time. In recognition of these energy savings, the plant was presented Power Magazine's Energy Conservation Award. (General Motors Corporation, 1974 Report on Progress in Areas of Public Concern, February 7, 1974.)

The following remarks were made by John C. Sawhill while attending the 1974 Sales Conference, International Food Service Manfacturers Association, on May 17, 1974. During his speech, he made reference to three companies that had made substantial conservation contributions.

> "Dow Chemical -- 10 percent reduction in energy consumed per unit of output in 1972 and again in 1973. Their goal for 1974 is a further 7 percent reduction. (Final figures not available for their 1974 goal.)"

MONTANA STATE LIBRARY
930 East Lyndale Avenue
Helena, Montana 59601

"Alcoa has reduced energy used for aluminum mill products by 30 percent between 1971-73."

"J.C. Penney Company cut energy consumption more than 26 percent with its program, without reducing store hours or operating efficiency. The company adjusted thermostats, demonstrated fewer TV sets per department and reduced lighting to achieve this savings."

State Fuel Allocation Program

Fuels allocated for January 1975 were 804,002 gallons, compared to 1,008,364 gallons for December 1974 -- a decrease of 204,362 gallons. Of the total fuels allocated for January 1975, 507,752 gallons (62 percent of the total) were gasoline and diesel fuel for the retail trade sector. The wholesale trade and agriculture sectors combined accounted for 12 percent of the fuels allocated for the Month of January (89,500 gallons and 77,550 gallons, respectively).

Tips for Energy Savers

This is continued from our last issue and taken in part from an advanced draft of a new booklet entitled: "Tips for Energy Savers". The booklet will be published by the Federal Energy Administration.

-- Light colors for walls, rugs, draperies and upholstery reduce the amount of artificial lighting required.

-- Add an off-on switch to the line to "quick-on" television sets or disconnect them when they are not in use. Even when the screen is dark, "quick-on" sets, especially the tube types, are using energy. This is because an element in each tube is burning to keep the tube up to or near its operating temperature.

-- Maintain electrical tools in top operating condition by keeping them clean and properly lubricated.

-- Buy the power tool with the lowest horsepower adequate for the work you want it to do.

-- Remember to turn off shop lights, soldering irons, glue pots and all bench heating devices as quickly as possible.

Our next issue will present more energy saving hints for new home planning.

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

S
351.823
E13e
March 1975

STATE DOCUMENTS

March 3, 1975

MAR 5 1975

MONTANA ENERGY STATUS REPORT

Individual Energy Conservation - A Failure?

Sylvia Porter, syndicated columnist, reported in the January 21, 1975, Oregon Statesman the results of an energy survey conducted by a team of undergraduate students headed by Rovenna Kilkeary, a graduate student at Herbert H. Lehman College of the City University of New York.

"A really dismal score," summarized Mrs. Kilkeary, "particularly in view of the fact that most Americans live in areas where 80 percent of energy waste is concentrated."

Here, as an illustration, are the question-by-question results of that survey:

- 74 percent are using air conditioners less
- 74 percent drive at 55 mph
- 71 percent are planning car use
- 68 percent are turning off lights that are not needed
- 64 percent are turning off their televisions when leaving the room for any length of time
- only 63 percent think of energy when buying appliances
- only 40 percent have considered storm windows
- a mere 30 percent have added insulation to their home
- an insignificant 23 percent serve one-dish dinners

The most important single fact brought to light by this survey was that only 30 families out of 600 (one in 20) could answer "Yes, I am doing this" to all nine of the questions. Two out of five could answer "Yes" to only four or fewer of the questions.

This data was fed into computers and it clarified those who did and did not shift their life styles to conserve energy. Those who apparently did little to conserve were the families in the higher education -- higher income brackets.

MONTANA STATE LIBRARY
930 East Lyndale Avenue
Helena, Montana 59601

Those who did change their life styles and, in many cases, drastically, were the poorer families (income $6,000 and under per year) and inflation-ravaged families with children and trying to get by on less than $15,000 a year.

Mrs. Porter says this study underlies how poor and dreadfully inadequate have been the results of this past year's educational campaigns sponsored both by government and private organizations to convince the public to conserve energy.

Energy Saving Tips of the Day

The following conservation tips were provided by the Federal Energy Administration:

-- Try banking by mail. You'll save time and effort. You'll save gasoline too -- especially if you have been using the drive-in teller window.

-- Install spray taps on kitchen and bathroom sink faucets. This allows for faster washing and rinsing, with less use of hot water.

-- A kitchen timer with a loud bell can help you avoid overcooking -- and help save energy too.

-- Whenever practical, use a steamer or pressure cooker to prepare several foods at the same time. Many such utensils have partitioned inserts to allow cooking several vegetables simultaneously.

-- When water used in cooking begins to boil, reduce the heat immediately. Foods will continue to steam or boil properly on medium or low heat, especially if the cooking pot is covered.

-- Cook meals in the oven rather than on the range top, whenever practical. Ovens are generally more economical than top burners because they hold in the heat. Oven burners operate only intermittently, whereas top burners operate continuously during cooking.

-- Don't let hot water run continuously while rinsing the dishes, washing, or shaving. Use hot water in a stoppered sink for these purposes, drawing a fresh sinkful only as needed.

-- If you use electric heating, consider installing a heat pump system. The heat pump uses outside air in both heating and cooling and can cut electric heating costs by as much as 60 percent.

State Fuel Allocation Program

Of the total fuels allocated for February 1975, 496,500 gallons (75 percent of the total) were gasoline and diesel fuel for the retail trade sector. The wholesale trade sector accounted for 13 percent of the fuels allocated for the month.

351.823
E13e
April 7, 1975

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

STATE DOCUMENTS

BILL CHRISTIANSEN, CHAIRMAN

April 7, 1975

MONTANA ENERGY STATUS REPORT

APR 9 1975

Most Promising Natural Gas Plan Awaiting Decision From Zarb */

The FEA staff has proposed a plan to ease the natural gas shortage and, in the same stroke, help equalize fuel prices across the United States. The proposal, outlined in a January 20, 1975, Action Memorandum to FEA Administrator Frank Zarb, would force certain gas users to stop burning gas. FEA would then allocate low-sulfur oil to replace the gas. The FEA memorandum pinpoints three major industrial gas users which often have duel-burning (oil and gas) capability, but no incentive to use oil since it is more expensive. The FEA proposal would amend the Energy Supply and Environmental Coordination Act (ESECA) "to direct that users not be served with natural gas, forcing them to turn to oil (or coal, where possible, under existing provisions of ESECA)." FEA would then allocate petroleum products to them under existing procedures.

The three targets of FEA's enforced conversions are electric utilities, oil refineries and the steel industry. Between them, they represent "about 15 percent of total U.S. natural gas usage which might be converted to oil in the near term", the FEA memorandum states.

(1) Utilities used about 20 percent of the Tcf (Trillion cubic feet) of gas consumed in the U.S. in 1974, and this was burned under utility boilers. Of this amount, FEA estimates about 1.8 Tcf (eight percent of total U.S. consumption) could be converted to oil. "This represents about two-thirds of the projected curtailments during the 1974-75 heating season", FEA said.

(2) Petroleum refining accounted for 20 percent of all industrial gas consumption in 1971 (eight percent of total U.S. consumption). Distillate or residual oil can be used in place of gas, with some loss in refinery output, equivalent to about three percent of crude intake.

(3) The steel industry consumed about 10 percent of industrial gas in 1971 (about four percent of the total U.S. consumption). In steelmaking, oil can replace gas in coke ovens, sinter plants and open-hearth furnaces. That amounts to about 10 percent of steel industry use, or 0.4 percent of total U.S. usage. The FEA memorandum notes that gas is essential for some processes -- billet reheating, heat treating -- "and curtailments would cause sharp decreases in steel output".

---

*/ *Weekly Energy Report*, March 3, 1975.

MONTANA STATE LIBRARY
930 East Lyndale Avenue
Montana 59601

Results of this plan will be presented in a later issue after this office has received it.

Cost of Running Electric Appliances for One Year**/

Appliance	Annual Electricity Consumption (kilowatt hours)	Annual Cost
Air conditioner	2,000	$64.60
Range	1,550	50.06
Food Freezer (16 cu. ft.)	1,200	38.76
Clothes dryer	1,200	38.76
Refrigerator (frost free - 12 cu. ft.)	750	24.22
Television (color)	540	17.44
Television (black and white)	400	12.92
Dishwasher (with heater)	350	11.30
Frying pan	240	7.75
Electric blanket	150	4.85
Iron (hand)	150	4.85
Washer (automatic)	100	3.23
Totals	8,630	$278.74

New Mileage Guide Available for 1975 Cars and Light-duty Trucks***/

To help prospective buyers choose a new car, the Federal Energy Administration, in cooperation with the U.S. Environmental Protection Agency, has published results of fuel economy tests in a booklet entitled "1975 Gas Mileage Guide for New Car Buyers".

The "Mileage Guide" lists estimated city and highway miles per gallon ratings for all new cars and light-duty trucks that meet 1975 emission standards and are certified for sale in the United States as of September 15, 1974. Each vehicle's engine size, number of cylinders and type of fuel system are described. In addition, particular models equipped with catalytic converters are identified.

**/ Iowa Energy Bulletin, February 1975.

***/ Federal Energy News, March 17, 1975.

While these ratings can help a buyer select a car with good fuel economy, FEA noted that an individual driver will not necessarily attain the identical gas mileage because of driving habits, traffic conditions, accessories and condition of the engine.

To obtain single copies of this report, write to:

Consumer Information
Federal Energy Administration
Pueblo, Colorado 81009

For multiple copies, write to:

Federal Energy Administration
Communications and Public Affairs
Old Post Office Building
Room 222-B
Washington, D.C. 20461
Attn: George Young

Spring Energy Conservation

Following are energy conservation tips selected from a new booklet entitled: "Tips for Energy Savers", published by the Federal Energy Administration.

-- Maintain electrical tools in top operating shape, clean and properly lubricated.

-- Keep cutting edges sharp. A sharp bit or saw cuts more quickly and therefore uses less power. Oil on bits and metal cutting compounds on saws also reduce power required.

-- Buy a power tool with the lowest horsepower adequate for the work you want to do.

-- Remember to turn off shop light, soldering irons, glue-pots, and all bench heating devices as quickly as possible.

-- When using gasoline-powered yard equipment, do not allow it to idle for long periods. Turn off and restart when ready to resume work.

-- Plant deciduous trees and vines on south and west sides of homes to provide protective shade against summer sun and let in natural light in the winter.

-- Use manure or a natural compost from your own yard cutting for fertilizer. Petroleum and natural gas are used as raw materials and for fuel in the manufacture of artificial fertilizers.

State Fuel Allocation Program

Fuels allocated for March were 565,748 gallons, compared to 496,500 gallons for February -- an increase of 69,248 gallons. Of the total fuels allocated, 353,266 gallons (62 percent of the total) were gasoline and diesel fuel for the retail trade sector, and 115,732 gallons (20 percent of the total) were allocated to the wholesale trade sector within Montana.

JA/sb

351.823
E13e
May 5, 1975

STATE DOCUMENTS

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

MAY 6 1975

BILL CHRISTIANSEN, CHAIRMAN

May 5, 1975

MONTHLY ENERGY STATUS REPORT

ENERGY RESEARCH COORDINATION PROJECT

The Montana Energy Advisory Council has received funds from the Federal Energy Administration to support an energy research coordination project. The project will have lead responsibility within state government for the coordination and utilization of energy-related research efforts. Jim Nybo, the Energy Research Coordinator, will work closely with present and potential research users in state government and with energy-related research efforts of the university system, the federal government, state government, and the private sector. In addition to the primary objective of research utilization by state government, the project will provide leadership in coordination and communication with researchers during research performance, and in the development of a state strategy for energy research.

Many of the specific objectives and priorities of the project are yet to be finalized pending an opportunity to bring state agencies into the discussion. The energy research coordinator will be working closely with the state library where most of the energy-related research collection is now housed, and, of course, beneficiaries of the project within state government are encouraged to deal directly with Jim on ways we can make it more effective.

ENERGY CONSERVATION OFFICE

In order to give more attention to the need of energy conservation in all sectors of the State of Montana, personnel from the Fuel Allocation Office have been added to the Lieutenant Governor's staff.

This staff is charged with the responsibility of creating a program that will assist the people of Montana in their efforts to conserve energy in all forms. This office welcomes the receipt of and will distribute information concerning energy savings in areas such as space heating and lighting, transportation and energy efficient building design.

Manley Mortensen is the Conservation Officer and Martha Thompson is the secretary for the Conservation Office. The office is located in Room 103 of the Capitol and the phone number is 449-3773.

MONTANA STATE LIBRARY
930 East Lyndale Avenue
Helena, Montana 59601

EMISSION CONTROLS */

According to a study by the Environmental Protection Agency, removal of emission controls will more than likely result in poorer gas mileage.

Changes made by repair shops resulted in an average loss of 3.5 percent in fuel economy and a drastic increase in hydro-carbon, carbon monoxide and oxides of nitrogen emissions.

Cost of work done by the garages ranged from $12.50 to $37.50. In addition to disconnecting emission control equipment, garages generally enriched the carburetor idle setting and advanced timing with individual losses in fuel economy of up to 15.5 percent.

FOOD FOR THOUGHT -- CONSERVATION THROUGH RE-CYCLING

An editorial in the April 14, 1975, edition of The Post-Register, Idaho Falls, Idaho, provided several statements that has put our energy situation, particularly the intermountain states, in perspective.

One statement by Dr. Glenn Seaborg, former Chairman of the U.S. Atomic Energy Commission was as follows:

> "To prevent a number of crises in the supply of natural resources, this country will have to create within a few decades a re-cycle society, a society in which virtually all materials are re-used indefinitely. In such a society, the present materials situation is literally reversed. All waste and scrap -- what are now called secondary materials -- become our major resources, and our natural, untapped resources become our back-up supplies. . . . This would require a shift in industry to the design and production of consumer goods that are not obsolescent (and planned that way). . . . This means that products will be built to be more durable, easily repairable with standardized replaceable parts. . . . In a re-cycle society, all products and parts might be labeled for use, origin and material content so they can be identified and they might have a regulated trade-in value."

Then Dr. Seaborg said:

> "Such a society would be less energy-intensive. For example, re-cycled steel requires less energy than steel made from iron ore. Some 70 percent less energy is used in re-cycling paper than in using virgin pulp; 12 times as much energy is needed to produce primary aluminum as to recover aluminum scrap."

---

*/ Daily Missoulian, April 16, 1975.

MONTHLY ENERGY STATUS REPORT
May 5, 1975

The necessity for positive action on the energy research and development front was adequately summed up in Salt Lake City recently by Russell W. Peterson, Chairman of the President's Council on Environmental Quality. Said Peterson:

> "The public is exposed to so much emotion and so little compensatory science that I am afraid ecology is in danger of becoming synonomous with a soft-headed desire to repeal technology and re-invent the Garden of Eden. And the problem is that when ecological concerns come into conflict with other social needs or appetites, policy-makers in industry and government tend to regard ecology as a desirable but dispensable extra."
>
> "The world is an integrated, interdependent system. . . . All of us have elected environmental damage, by voting for convenience with our dollars, and we will all have to change our ways . . . either unwillingly, in helpless response to one shortage after another, or willingly, in a rational, deliberate, national-regimen, systems approach."

MONTANA TO MAKE WASTE PAY

According to a recent news release from Associated Press, Montana apparently is first in line for a share of some $225 million in federal garbage-reclamation money.

According to Terry Carmody, Chief of the Solid Waste Management Bureau, a little publicized legislative appropriation of $200,000 for design of municipal garbage-recycling systems may lead to big money from the federal government.

Carmody said Sen. Pete V. Domenici, R-N.M., has introduced a measure appropriating $225 million over a three-year period to encourage the reuse of garbage.

"If we recover and reuse steel and iron, aluminum and even glass from solid waste, we will help alleviate potential materials shortages and save energy by use of secondary instead of virgin materials," Domenici said in introducing his bill.

Carmody said the engineering designs to be fostered by the Montana allocation would show communities how to recover valuable resources from garbage now buried or otherwise disposed of.

He said the money also probably would qualify the state for a variety of federal projects under Domenici's proposal.

In July 1974, Governor Thomas L. Judge asked state employees in Helena to begin salvaging recyclable paper. About 214,000 pounds of recyclable material had been gathered through mid-January. Recent monthly averages reached about 50,000 pounds due to increasing cooperation and the legislature. Through mid-January, the program realized $2,270.22. Maybe 214,000 pounds over a seven-month period doesn't sound like much, but it represents 2,033 trees that won't have to be cut or a heat value of 1.4 billion BTUs.

ENERGY SAVING TIPS OF THE DAY **/

-- When shopping for new lamps, consider the advantages of those equipped with three-way switches. By allowing you to adjust the light level to the task at hand, they can help you conserve energy.

-- Use aluminum foil sparingly. If you use foil for wrapping foods, try re-using it at least once. Making aluminum requires large amounts of electricity and by saving aluminum you can help save energy.

-- Large, open room areas, such as a basement, should be served by several light switches. You will save energy by illuminating only areas where the light is really needed.

-- Save energy by drying your clothes in consecutive loads. Once the dryer is warm, it cuts down on start-up energy consumption.

-- A faulty automatic choke wastes gasoline. If your car continues to idle "fast" after a reasonable warm-up period, have the choke adjusted.

-- Take advantage of the heat from longer May days. Leave curtains and draperies open on the sunny side of the house during daylight hours. Close them at night to help minimize heat loss.

-- Whenever practical, use small, portable appliances, such as an electric skillet, bake oven or toaster, in place of larger appliances, or your full-sized oven. It is more convenient and will save energy.

Good conservation habits, practiced daily, will mean savings of cash as well as energy. All energy costs will continue to rise and this alone should encourage conservation.

STATE FUEL ALLOCATION PROGRAM

Fuels allocated for April were 456,420 gallons, compared to 565,748 gallons for March -- a decrease of 109,328 gallons. Of the total fuels allocated, 350,220 gallons (77 percent of the total) were gasoline (233,720 gallons) and diesel (116,520) fuel for the retail trade sector.

**/ Federal Energy News, March 1, 1975.

351.823
E13e

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

June 3, 1975

MONTHLY ENERGY STATUS REPORT

Electric and Gas Utilities Raise Rates $6.5 Billion During 1974[1]

Fuel adjustments allowed electric and gas utilities to increase their prices by an estimated $6.5 billion during 1974 and, according to this survey released by the Senate Subcommittee on Budgeting, Management, and Expenditures, the increase is greater than the total of all rate increases approved during the last 25 years.

Rate increases reached 1400 percent in the District of Columbia; with New York reporting a 900 percent increase; Maine and Tennessee a 750 percent increase; Florida, Maryland and Michigan a 500 percent increase; and California, Connecticut, Indiana, West Virginia and Wisconsin a 300 percent increase.

The governors of Virginia and Michigan have established commissions to investigate the utility area.

Northern-Tier Refiners See Crude Pinch[2]

The Federal Energy Administration reports that Northern-Tier refiners are pleading for a preferential share of oil imports from Canada before planned reductions in supplies from that source create a shortage that could amount to a 100,000 barrels per day reduction later this year.

In the absence of corrective action, a Continental Oil Company executive said the deficit will grow to nearly 200,000 barrels per day by 1977.

The Northern-Tier states are made up of Wisconsin, Minnesota, North and South Dakota and Montana. The area has 439,000 barrels per

---

[1] The Council of State Governments, May 5, 1975.
[2] *Oil and Gas Journal*, April 21, 1975.

day of refining capacity; 80 percent of their feedstock is supplied by imports from Canada.

Watered Unleaded Fuel Passes Test[3]

Gasoline containing up to 10 percent water is claimed to have passed its first road test.

The fuel (HydroFuel) can be used without any motor or carburetor adjustment. According to the United International Research, Inc. (UIR), the fuel gives about the same miles per gallon as leaded gasoline and the cost is estimated to be about 5 percent less.

UIR uses an alkaline organic chemical blender called Hydrelate to form a clear solution of water in gasoline through simple mixing. The combination of water and Hydrelate boosts 72 octane clear gasoline to about 92 octane. The system is not suitable for leaded gasoline for the tetraethyl lead would form lead oxide.

Energy-Saving Tips of the Day[4]

-- When driving, try to anticipate signal changes. If you see a red light far ahead, lift your foot from the accelerator immediately and coast to the intersection. Maintaining full speed and then braking at the last minute wastes gasoline.

-- Use bath and kitchen ventilating fans only as needed. A fan running needlessly wastes electricity. It also exhausts warm room air to the outside during the fall and winter months.

-- Do as much household cleaning as possible with cold water. This saves energy -- besides, some cleaning products are actually designed to work better in cold water.

-- When waiting in your car, or when caught in stalled traffic, don't idle your engine more than a few minutes. Save gasoline by running the engine only when you are ready to proceed.

-- Let left-overs cool off before putting them into the refrigerator. Putting hot foods directly into the refrigerator makes the unit work harder to cool the air inside the compartment and wastes energy.

---

[3] Ibid.
[4] Federal Energy News, March 1, 1975.

Europeans Use Less[5/]

A recent Federal Energy Administration study indicates consumers in Denmark, Switzerland, Sweden, West Germany and Canada use less than half as much energy as Americans. All these countries have comparable living standards, but only Canada approaches our per capita energy consumption.

The report challenges arguments that there is a close relationship between energy use and economic well-being. Big cars and single-family homes are some reasons why U.S. citizens use so much more energy.

"Average gasoline consumption in the five other countries is only 36 percent of the U.S. level," says FEA analyst Jeffrey Milstein.

Fuel Savings at North Carolina Plant[6/]

Western Electric Company (W.E.) has reported significant energy savings at its Greensboro, North Carolina, facility. The sprawling maze of offices and laboratories covers four levels and more than 17 acres of floor space and has 2,500 employees. Project Manager G. C. Lahey says the complex used only 2 million kilowatts of electricity this January, compared to 4.2 million during January 1972.

Despite substantial energy savings, W.E. didn't have a lower fuel bill. "While the bill in 1972 was $33,675, this January's came to $34,054," said Lahey.

Savings equaled almost two million gallons of fuel oil, or the yearly needs of 1,900 North Carolina homes.

Actions included reduced lighting in hallways and areas with natural light, heating-cooling temperature adjustments, carpooling, and others. Some cutbacks helped in more than one way. In the summer, for instance, lights were doubling the building's heat. Less lighting helped reduce power used for air conditioning.

[5/] Energy Reporter, May 1975
[6/] Ibid.

Solar Energy by '79[7]

The Energy Research and Development Administration (ERDA), with the Department of Housing and Urban Development, the Federal Energy Administration and several other agencies, has issued the National Plan for Solar Heating and Cooling. The government's goal is to have industry produce and make available solar heating and cooling systems for homes and businesses. These systems would reduce fossil fuel demand and would not pollute. Some 25 percent of our energy is used to heat and cool buildings and supply hot water.

The report offers three demonstration options. The first calls for building 350 homes and 50 commercial units by 1979 and costs $109 million; the second includes 1,000 homes and 200 commercial units and costs $208 million; and the third would result in 2,000 residential units and 400 business facilities and costs $306 million.

The Federal Energy Administration will support the national plan by analyzing the role of solar energy in relation to other energy development and conservation efforts. The agency's growing solar energy branch will promote accelerated use and commercialization of proven solar energy systems.

Potential Hazards Associated With Catalytic Converters

In a recent memorandum to alert county commissioners, mayors and county civil defense directors, the Director of Civil Defense, C. L. Gilbertson, indicated the hazards associated with catalytic converters. In his memorandum, Mr. Gilbertson explained that most 1975 model passenger vehicles and light trucks (6,000 GVW) are equipped with catalytic converters as part of the engine exhaust system in order to meet current EPA emission standards. These converters operate with internal temperatures reaching 1200 to 1300 degrees F. under normal conditions, with a potential of 2000 to 3000 degrees F. in abnormal conditions. Tail pipe exhaust temperatures may reach 450 to 600 degrees F. in normal situations and up to 900 degrees F. in abnormal conditions.

Because converter units are usually mounted at or below the vehicle frame level, thus close to the ground, a converter equipped vehicle driven over or parked on a surface of easily combustible material, such as dry grass, could cause a fire.

---

[7] Energy Reporter, FEA, May 1975.

The United States Forest Service identifies ignition temperatures for selected forest fires as follows:

Forest Fuel	Ignition Temperature
Rotten Wood	500 to 520 degrees F.
Ponderosa Pine Needles	570 to 640 degrees F.
Cheat Grass	720 to 735 degrees F.

Near instantaneous ignition can be expected above 1000 degrees F. All temperature ranges above ignition temperatures are subject to ambient temperatures and fuel moisture content.

Suggested actions:

(1) Alert all personnel to the potential fire hazard as described above, particularly those units which in normal operation may be required to stand and idle (such as small tanker units), and require this type of operation to either water down or clear the area where the vehicle will idle. (Black top or asphalt surfaces have been known to blister and bubble under idling conditions.)

(2) Alert those personnel with maintenance responsibilities to the increased danger of contact burns due to the heat retention capacity of the converter.

(3) Consider installing protective shielding on converter equipped vehicles. However, care should be exercised to ensure adequate ventilation to prevent further increase in the operating temperatures of the converters. This shielding is not available from vehicle manufacturers for all models and in many cases would have to be fabricated. Care should also be taken in installing shielding so that it does not become a collector of flammable material.

Because of the many possible problems confronting those using vehicles with converters, the U.S. Forest Service Equipment Development Center at San Dimas, California, is presently doing an intensive study of the potential hazard. The results will be made known at a later date.

State Fuel Allocation Program

Fuels allocated for May were 359,361 gallons, compared to 456,420 gallons for April, a decrease of 97,420 gallons. Of the total fuels allocated, 184,943 gallons were gasoline and 9,083 gallons were diesel fuel for the retail trade sector.

351.823
E13e

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

July 7, 1975

STATE DOCUMENTS
JUL 17 1975

MONTHLY ENERGY STATUS REPORT

Montana Natural Gas Supplies Dwindling

Montana's dependency upon imported natural gas was again illustrated last week in a letter sent to Representative Frances Bardanouve by the Montana Public Service Commission (PSC). The PSC provided the following natural gas statistics for Montana for the year 1974:

	Volumes at 14.73 psia (Millions MCF)	Percent of Total
MPC Imports (Canada)	48.11	59.67
MDU Imports (Dakotas-Wyoming)	13.89	17.18
MPC Montana Production	10.44	12.95
MDU Montana Production	8.22	10.20
	80.62	100.00

Examination of these figures will reveal that Montana in 1974 was dependent upon imports for 76.85 percent of the natural gas consumed in the state.

Other figures supplied the PSC by the Northern Natural Gas Company indicate that, even if no gas were exported from Montana, the state would still be approximately 50 percent dependent upon imported natural gas.

Canadian National Energy Board to Reduce Natural Gas Allocation

Early in May of this year, the Canadian National Energy Board voted to reduce natural gas allocations passing through Aden, Alberta, to the State of Montana by 55 percent. This will create a natural gas deficiency of 11 billion cubic feet in 1976 and a 15 billion cubic feet deficiency in 1977.

More than 15 major industries in Montana will have their natural gas allowances cut by 50 percent. Included will be Anaconda, Hoerner-Waldorf, Ideal Cement, A.S.& R., Kaiser Cement, Van-Evan Plywood, Stauffer Chemical, C & C Plywood, Evans Products, Pfizer, Plum Creek Lumber, Borden Chemical, Big West Oil, Cyprus Industries and Wesco Refining. Combined, these industries represent 10,205 jobs within the state.

Many of these industries cannot remain active on 50 percent of their usual supply of natural gas.

Curtailment of natural gas to Montana may result in the utilities not extending services to prospective new customers.

Gasification Task Force to Face Issues

Governor Thomas L. Judge will soon announce the name of those appointed to his Gasification Task Force. The task force will be comprised of individuals representing the private and public sectors within Montana. They will address themselves to six major issues confronting Montana prior to the construction of a coal gasification plant.

The six issues are:

1. Technological. Two gasification processes are available and each has its merits and drawbacks. These must be weighed and a selection of one or the other has to be made.
2. Environmental. Atmospheric emissions, sulfur and ash byproducts must be accounted for.
3. Site. A location for the plant must be determined and placed where coal and water are readily available.
4. Financial. Because of the cost, estimated at one-half billion dollars,and the energy challenge facing Montana, the public and private sectors may be required to enter into a joint venture partnership.
5. Legal. The task force will investigate possible statutory and constitutional restrictions of such a partnership.
6. Citizen Involvement. The people of Montana must be kept fully informed and involved in the decision-making process during this venture.

Dim Future for Gas Lamps[1]

FEA has been urging the gas industry to voluntarily stop promoting the sale of gas lamps.

A decorative gas lamp burns 18,000 cubic feet of natural gas a year, or as much energy as is needed to provide an average family with hot water for six months. It is estimated that there are four million such lamps in the United States.

Generating and delivering electricity for a 60-watt electric bulb for 24 hours requires less than 17,000 Btu's of fuel energy at the power plant. The equivalent gas light uses three times as much.

Two additional factors are involved in gas lighting. The electric light can be switched off when not needed; most gas lamps use gas (at full rate) 24 hours a day. Thus, if a light is used five hours an evening, the net energy advantage is almost 14 to 1 in favor of the bulb.

Finally, there is a natural gas shortage. Two-thirds of our electricity is generated from sources other than oil and gas. So in terms of consumption of scarce fuels, the energy advantage of the electric bulb rises to a remarkable 43 to 1.

In the unlikely event that all gas lamps were replaced with electric bulbs, and operated five hours each day, U.S. fuel consumption would drop by the equivalent of 32,000 barrels of oil daily, enough to heat 600,000 homes for a year.

In many neighborhoods, families have requested that their post lamps be extinguished and found that existing electric lights at the front door provide adequate illumination.

Coal Process Yields New Crude Source[2]

Universal Oil Products (UOP) has announced their development of a new method of producing coal-derived synthetic oil.

Extensive testing in a pilot plant and small-scale development model has shown that more than four barrels of petroleum-like liquid can be produced from one ton of high-sulfur coal. The processed liquid is fully compatible with other crude oils and can be further refined into gasoline, jet fuels, and diesel oils with conventional equipment.

---

[1] Energy Reporter (FEA), June 1975
[2] Montana Oil Journal, June 28, 1975

The process involves mixing pulverized coal with a solvent and hydrogen and passing the mixture through a high-temperature, high-pressure reactor similar to the cracking process now in use. Ash is separated from the mixture and the product stream is hydrotreated.

The process is applicable to all types of coal.

Montana Gas Stakings Jump as Natural Gas Crisis Seems Inevitable[3/]

A natural gas crisis of disastrous proportions appears likely to threaten the economic stability of the nation, according to the Montana Oil Journal. The FPC estimates that this year's natural gas shortage will be 45 percent greater than last year's.

The American Gas Association says the decline in gas reserves could be reversed by 1978, if Congress relaxes well-head gas controls to allow the well-head prices to rise to $1.50 per thousand cubic feet of gas. Their estimate depends upon offshore gas discoveries over and above the three trillion cubic feet expected annually under current price controls.

In apparent response to anticipated Congressional action, the number of locations staked for gas exploration jumped again this week. Total stakes for the week of June 23rd were 28. Twenty-one of these locations was staked by Fuel Resources Development Company (Fuelco).

Waste Oil to be Re-refined, Reclaimed, or Reprocessed[4/]

Cars, airplanes, and factories generate over one billion gallons of used lubricating oils each year. Although dirty, this waste oil has high energy value and is drawn from a valuable portion of a barrel of crude oil.

There are many uses for waste oil. It can be re-refined into good lubricating oil, used to make other petroleum products, reclaimed

---

[3/] Montana Oil Journal, June 28, 1975

[4/] Energy Reporter, Federal Energy Administration, May 1975 to nearly original quality for industrial use, or reprocessed into clean fuel for burning. Yet, today, half of all waste oil in the U.S. is lost, as far as recycling is concerned.

To make matters worse, much of the country's waste oil is discharged directly into the environment. Disposal methods include dust control and indiscriminate dumping into sewers, rivers and streams. A concentration as small as one part oil to one million parts surface or groundwater causes taste problems in drinking water.

FEA's Industrial Programs Office has developed an action program to encourage re-refining, reclaiming, reprocessing, and increased use of waste oil as a fuel supplement to virgin oil and coal-fired operations (with proper emission controls).

FEA has begun work with state governments to draft a model "waste oil" bill. Initiatives such as tax regulations, labeling requirements, and government purchasing specifications are also underway.

Notes from the MEAC Research and Conservation Office

The Department of Public Instruction has invited the Energy Conservation Office to participate in a meeting concerning maintenance supervisors and school board members. All classes of school districts will be represented. The MEAC role in the meeting concerns the identification both of problems that contribute to energy waste and of practical conservation measures and solutions to the problems.

Plans to use public service announcements on radio and television as a medium for distribution of energy conservation messages are in process at this time. Lt. Governor Bill Christiansen will continue his contribution to energy conservation efforts through participation of the energy public announcements as requested.

Energy Saving Tips of the Day[5/]

-- Install awnings over windows on the sunny side of your house. Properly designed, they can reduce solar heat gain by as much as 80 percent.

[5/] Federal Energy News, June 1975

-- If you have central air conditioning, be sure to insulate cold air ducts that pass through non-cooled spaces -- especially if they go through a hot attic. You'll ease the burden on your air conditioner -- and save energy. Also, to permit free flow of air, keep your filter clean on the unit.

-- Many portable appliances, such as electric skillets, can be used as serving dishes at the table -- especially during the summer when meals and home entertainment tend to be less formal. This will cut down on the number of dishes to be washed and can reduce hot water consumption.

-- Perform moisture-producing chores, such as mopping, laundering and dishwashing, during the cooler times of the day or late evening. By doing so, you can minimize the discomfort caused by the increased humidity associated with these activities.

State Fuel Allocation Program

Fuels allocated for June were 698,700 gallons, compared to 359,361 gallons for May, an increase of 339,339 gallons. Of the total fuels allocated, 416,900 gallons were gasoline and 280,300 were diesel fuel.

351.823
E 13e

STATE DOCUMENTS

AUG 15 1975

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

August 6, 1975

MONTHLY ENERGY STATUS REPORT

Energy and Man's Environment

Lieutenant Governor Bill Christiansen recently addressed teachers and administrators gathered at Fairmont Hot Springs for a three-day conference on "Energy and Man's Environment".

The goal of the conference was to orient Montana educators to the nature of the energy crisis and its educational implications.

The Lieutenant Governor's presentation, accompanied by charts and graphs, gave equal emphasis to all of Montana's sources of primary energy as well as secondary energy in the form of electricity, and heavily stressed the necessity of energy conservation.

The prepared text, charts, and graphs presented by the Lieutenant Governor will be reproduced and given to teachers throughout the state as part of a pass-along process from the educator to the student and on to the family of each student.

People Will Drive Less 1/

According to a recent Federal Energy Administration survey, six people in ten are willing to drive ten miles less a week to help cut oil imports.

Sixty-two percent would drive less rather than pay an extra ten cents a gallon for gas -- saving 200,000 barrels of oil a day, about 1.1 percent of daily use.

Other polls taken reveal that people consistently underestimate the number of miles they drive.

Window Shades 2/

Tests conducted at the Illinois Institute of Technology (IIT),

---

1/ Energy Reporter, FEA, July 1975.
2/ AERO Sun Times, May/June 1975.

Chicago, show that window shades alone can make a significant difference in heating and cooling bills. IIT researchers used a twin-room facility with a single-pane window between the test control room.

The shades were hung inside the window frame with a clearance of 1/4-inch at their vertical edges. Shade-hanging arrangements and room air-flow patterns were found to be important factors in heat-flow reduction.

Winter and summer temperatures were simulated using a refrigerating unit and arc and incandescent lamps. The results: a window equipped with a light color opaque roller shade admitted 47 to 54 percent less total heat than an unshaded window. In comparison, a venetian blind was found to reduce heat gain by 29 percent if fully closed, and by 18 percent in the 45 degree setting. A light colored drapery with a white surface backing reduced heat gain by 33 percent.

Under winter conditions, the shade-equipped window reduced heat loss by 24 to 31 percent compared to an unshaded window. A drapery and venetian blind reduced heat loss by 6 to 7 percent.

Natural Gas Cutoff to Burden Other Fuels[3/]

As the Arab oil embargo and the long gasoline lines fade from memory, Americans may be on the brink of a second crisis in energy supply -- only this time the fuel in short supply would be natural gas.

The Energy Resources Council (ERC) has directed FEA to form an interagency task force to assess the potential impact on the economy of next winter's curtailments of natural gas and recommend appropriate government action to deal with the shortage.

United States production of natural gas is gradually declining. As a result, we experienced shortages last winter in the range of 8 to 10 percent of supply. Curtailments for this coming winter are estimated to be in the 15 to 20 percent range.

Natural gas curtailments have already endangered and, in some cases, actually shut down industrial plants in several states. The increased demand for alternate fuels, especially imported oil, comes at the very time we are attempting to limit petroleum imports. As a first step in assessing the impact of gas shortages, FEA directed the Natural Gas Policy and Contingency Planning Task Force to require all natural gas companies to report on the side effects of possible natural gas curtailments. The task force will assess the demand that will be placed on alternative energy sources, such as fuel oil or coal, as a result of curtailments of natural gas to end-use customers.

[3/] *Energy Reporter*, FEA, July 1975.

Energy Saving Tips of the Day[4]

- In frost-free refrigerators, keep liquids covered to cut down on moisture build-up. This saves energy, and keeps the compartment smelling fresh longer between cleanings.
- After drying, fold sheets and pillow cases smoothly and "press" the wrinkles out by placing them on the warm top of your dryer. You'll save the work and energy that would be required for ironing.
- Why not use a push-type reel lawnmower for cutting your grass for the remainder of summer? You'll save the energy required for a power mower and get in some healthy exercise!
- Use glass or ceramic dishes in the oven. You'll find you can cook at temperature settings as much as 25 degrees lower than required for cooking similar meals in metal pans.
- Never use an open pan for boiling water. Water heated in a covered pan or tea kettle comes to a boil more rapidly and uses less energy.

MEAC Announces Its Priorities

In its first meeting, the Montana Energy Advisory Council (MEAC) approved an outline of priorities, needs and work plan for the coming year. The priorities are as follows:

A. Development of a preliminary Montana energy policy, in a manner and of a form to ensure its continuated evolution.

B. Creation of an organizational structure within member agencies that is capable of:

   1. Formulating, developing and implementing an energy policy and energy-related directives.
   2. Acting to reduce duplication of effort and conflict of objectives among member agencies.
   3. Facilitating communication, cooperation and coordination among agencies responsible for or affected by energy development and energy-related matters. (This capability is to apply to agencies and groups beyond Montana government, as well.)

---

[4] *Federal Energy News*, FEA, July 1, 1975.

C. Development of an energy conservation policy and plan of implementation for Montana government operations, with an ultimate goal of developing a significant energy conservation component of an overall Montana energy policy.

D. Development of an efficient and effective energy data storage, retrieval and use capability within Montana government. This capability would act to ensure that all relevant existing energy data is available to data users in a usable form and that energy data needs are identified and appropriate steps taken to meet them.

Opportunities, Obligations, Options: A Citizen's Guide to Participation in Government

The above is the title of a new publication prepared by the Office of the Lieutenant Governor. The publication was designed to serve as a guide to state government for those citizens who would like to participate more fully in the affairs of Montana State Government.

Montanans and Montana State Government face critical decisions in the very near future. Policies and plans that are developed to control energy development and land use in Montana could well shape our future to a greater degree than any decisions we have made to date. The magnitude of these decisions and of the changes that face our state require more active public involvement in government affairs. Montana can no longer afford public involvement that is limited to election year intervals.

There are four chapters in the publication. The first chapter presents the organization of the Executive Branch of Montana State Government and briefly discusses each department. The second chapter provides information on the various advisory councils attached to state government. Only those councils open to the general public have been listed. The third chapter provides a brief introduction to the Administrative Procedures Act, which determines how state government is to perform its functions and relate to the public. Also presented is a brief sample of the access points afforded citizens by public hearings, petitions and inspection of records. The final chapter discusses opportunities for public involvement at the local government level.

Anyone wishing a copy of the publication may write to the following address:

Lieutenant Governor's Office
Room 104
State Capitol
Helena, Montana 59601

Coal Development Information Packet - Supplement I

To expand our original "Coal Development Information Packet", this office recently completed a supplement presenting information on the socio-economic impacts of coal development within Montana.

It is presently at the printers and should be ready in late August, 1975.

We have the names and addresses of those who received the first packet and you will receive your copy of the supplement as soon as it becomes available.

State Fuel Allocation Program

Fuels allocated for July were 981,728 gallons, compared to 698,700 gallons for June, an increase of 283,028 gallons. Of the total fuels allocated, 679,228 gallons were gasoline and 302,500 gallons were diesel fuel.

JA/mt

351.823
E13e

OCT 8 1975

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

October 1, 1975

MONTHLY ENERGY STATUS REPORT

FEA Demand Watch[1/]

Demand for petroleum products for the four weeks ending September 12 averaged 15.6 million barrels per day, 8.0 percent below the figure for the same period in 1974. This level of demand was 8.5 percent below the comparable four-week period in 1973.

Motor gasoline demand was 3.5 percent below the 1974 level, but was virtually the same level as in 1973. Residual fuel oil demand, however, was down 16.5 percent from 1974 and was 5.5 percent lower than in 1973. Demand for distillate was off 5.2 percent from 1974 and was 8.8 percent lower than in 1973.

Demand for Petroleum Products
(thousands of barrels per day)

Product	Week Ending Sept. 12, '75	Week Ending Sept. 13, '74	Week Ending Sept. 14, '73	% Chg 75-74	% Chg 75-73
Total Demand	15,602	16,950	17,050	-8.0	-8.5
Motor Gasoline	6,814	7,064	6,848	-3.5	-0.5
Residual	2,281	2,733	2,413	-16.5	-5.5
Distillate	2,218	2,340	2,432	-5.2	-8.8
Other Products	4,289	4,813	5,357	-10.9	-19.9

The Federal Energy Administration defines "demand" as "disappearance from primary supply". This is output from refineries plus net imports (imports minus exports), plus or minus changes in primary stocks. Primary stocks include storage facilities over 50,000 barrels. FEA calculations are based on weekly data from the

---

1/ *Federal Energy News*, September 22, 1975.

American Petroleum Institute and other sources. FEA publishes demand figures on a weekly basis.

Feel Guilty?[2]

If you feel someone is pointing a finger at you and the car you drive, you are right. The personal car is viewed as the key to saving fuel. More efficient engines, a reduction in unnecessary driving, and maintaining the 55 miles per hour speed limit have all been dictated. Here's why! 1974 gasoline consumption figures break out to 1,760,000 barrels per day used in getting to work; 1,360,000 barrels a day for pleasure driving; 1,020,000 barrels a day for personal business; 800,000 barrels a day for business and government. The total is 4,940,000 barrels a day. Trucks burned 1,470,000 barrels a day; farm vehicles 200,000 and other users 200,000. Total daily consumption of vehicle fuel was 6,810,000 barrels. Multiply this by 16, the average number of gallons of gasoline obtained from the refineries per barrel of crude, and you have total gasoline consumed daily by the nation's 105 million automobiles, 26 million trucks and 400,000 buses, which is 75 percent of the petroleum used for transportation purposes in the United States.

State Conservation Effort

The energy conservation sector of the Montana Energy Advisory Council (MEAC) has participated in the formulation of energy conservation plans that were submitted by three sectors of state government that had natural gas consumption levels of over 50 million cubic feet per year.

The request for the gas conservation plan came from the Public Service Commission. During a hearing on the 19th of October, the PSC accepted the plans as submitted.

MEAC will participate in the National Governor's Conference Energy Conservation Program. The first workshop sessions will be held during the Month of October, 1975.

---

[2] Arizona Energy Patterns, September, 1975.

The Need to Recycle Aluminum[3/]

It is estimated that some 3 billion pounds of scrap aluminum are put on the trash heap each year. If only one-third of that were saved, there would be no need to import 2.5 million tons of bauxite or to use 6.5 billion kilowatt hours of electricity for the refining process.

Every pound of aluminum recycled to ingot conserves 95 percent of the energy needed to produce primary aluminum.

Aluminum presents real opportunities in the field of transportation, shelter, energy transmission and food packaging and distribution. One automobile alone has about 80 pounds of aluminum, and if that number went up to 420 pounds per car, the overall weight of the vehicle could be cut by about one-third.

One billion pounds of aluminum a year may be required for the manufacture of solar collector panels by 1985. The panel most often used in home heating measures 500 square feet and uses about 750 pounds of aluminum.

If only one percent of the nation's buildings were heated by solar energy, government figures indicate five million barrels of oil a year would be saved.

News Items Requested

Montana Energy Advisory Council members and other interested parties are urged to send energy-related news items from their respective departments. All news pertaining to energy conservation, research and development, or whatever, as it pertains to Montana will be most welcome.

These news items will be placed in our "Monthly Energy Status Report" with our intention of keeping you abreast of energy happenings within Montana.

Energy Independence[4/]

Frank Zarb, Administrator of the Federal Energy Administration, said recently that to achieve our national goal of energy independence

---

[3/] Western Aluminum News, June-July 1975.
[4/] Opening Statement on 1976 Fuel Economy Data, FEA.

depends on a two-pronged approach: increasing domestic energy supplies and conserving the energy which we do use. The President's agreement with Detroit last year to increase mileage efficiency by 40 percent between 1974 and 1980 is a big part of our conservation program.

By 1980, a 40 percent increase in auto efficiency will mean a daily saving of 630,000 barrels of gasoline. By 1985, the saving could rise to more than 1.1 million barrels a day.

Last year's average new car fuel economy was 15.6 miles per gallon. This year's 17.6 miles per gallon average is a 12.8 percent improvement and will, by itself, save almost 0.5 million barrels of gasoline per day.

The potential savings to the consumer from more fuel-efficient cars are also significant. Comparing a 15 miles per gallon car with a 20 miles per gallon car over the auto's lifetime, the American car owner will save about $1,000 at current gasoline prices, and proportionately more as gasoline prices go up.

JA:mt

351.823
E13e

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

November 3, 1975

MONTHLY ENERGY STATUS REPORT

"Which Way Did They Go? I Must Follow, For I Am Their Leader!"

Within the past two months, absolutely "authoritative sources" reported in the newspaper and/or in Congressional testimony the following:

- -- The Organization of Petroleum Export Countries (OPEC) will again raise prices $2 a barrel for oil in November.
- -- OPEC will raise prices $4 a barrel for oil in November.
- -- OPEC will raise prices 35% a barrel for oil in November (about $3.60).
- -- There will be a shortage of gasoline in the fall.
- -- There will not be a shortage of gasoline in the fall.
- -- Gasoline prices will increase by five to ten cents a gallon by January.
- -- If OPEC raises its prices, the President will rescind the tariff levies.
- -- If OPEC raises its prices, the President will retain the tariff levies.
- -- There are enormous amounts of oil and gas off the Atlantic Coast.
- -- U.S. Geological Survey cuts previous estimates by 80% for Outer Continental Shelf.

1/ *Pennsylvania Energy Council Newsletter*, October 1975.

- -- OPEC cartel power will diminish and world prices will decline.
- -- Oil company profits are "obscene" because they are so large.
- -- Oil company profits are too low to encourage expansion of supply.

Natural Gas Shortage In The East[2]

For the winter heating season, an FEA news release stated that for the winter heating season, projections of curtailments of 1.3 trillion cubic feet (Tcf), are up from 1.0 Tcf last winter.

North Carolina is likely to be worse off of all the states. It is served by only one pipeline, Transco, and that company expects to curtail nearly 60 percent of firm industrial requirements in North Carolina. Twenty percent of the state's firms have no alternate fuel capability, and for another industry conversion is uneconomic.

At that level, 96 percent of industrial use would be curtailed. And of the 1,486 plants using gas in the state, 283 of them, employing over 71,000 people, have no alternate fuel capacity.

U.S. Sitting On One-Fifth Of World Coal -- If You Can Get It Out[3]

The estimated coal resources of the United States, remaining in the ground as of January 1, 1974, totalled 3,968 billion tons, an increase of 23 percent over previous estimates, according to a new U.S. Geological Survey report. The report, entitled Coal Resources of the United States, January 1, 1974, pinpoints resources of 1,731 billion tons as known and identified from detailed mapping and exploration. The remaining 2,237 billion tons are believed to be present in unmapped and unexplored areas and in deeper parts of known coal basins, USGS said.

Montana has more coal reserves, 107.7 billion tons, than any other state.

Nevertheless, for "economic, political and environmental

2/ Weekly Energy Report, September 1, 1975.
3/ Weekly Energy Report, October 6, 1975.

reasons," the state remains well behind eastern states in terms of production. The 14 million tons of coal produced in Montana last year was well below Kentucky's 133 million ton production, the nation's highest.

Montana's resources are about 290 billion tons. But some of the resources are too deep or are in coal beds too thin for economically feasible mining.

Conservation Bumper Stickers Available

The Federal Energy Administration recently mailed to this office a large number of bumper stickers encouraging motorists to observe the 55 mile per hour speed limit. They are titled as follows:

-- I'm 55.
Drive me.

-- Drive 55 today,
or tomorrow
you won't.

-- The faster
you drive, the
richer they get.

-- Fast is
fuelish.

-- Pass me now,
you'll be
walking later.

-- Driving 75 is sheik.
Driving 55 is chic.

Should you wish a set of these, write to the Lieutenant Governor's Office and state the number of bumper stickers you would like.

Public Support For Overall Need To Save Energy, Reduce United States Dependence On Foreign Oil Imports, Cited In Federal Energy Administration Consumer Survey

Reflecting changing attitudes, the public now seems to recognize and accept the fact that the energy shortage is real and that the era of cheap energy is over, according to a survey announced by the Federal Energy Administration on October 20, 1975.

The survey showed that the overwhelming majority of people not only acknowledged the need to save energy, but also say that doing so is even more important than it was a year ago. Moreover, almost half (49%) of the public also think that this need will extend far into the future.

Public attitudes have also shifted significantly on the nature of the energy situation, whether real or contrived. A year ago the public was divided over the issue; 32% believed the energy shortage to be real; 37% believed it to be contrived; 25% felt it to be some of both. By the middle of 1975, the bulk of Americans (45%) had concluded that the situation is real; 32% still thought it contrived; 17% felt it to be some of both.

Energy Saving Tips Of The Day

-- Get the right size furnace and water heater for your needs. A unit larger than is necessary merely wastes fuel.

-- Make sure your thermostat is away from heat or cold sources like windows, heating ducts, lamps, etc.

-- Clean your thermostat yearly by removing the cover and carefully blowing away any dust. Do not tamper with it!

-- Don't rely upon portable electric heaters to do full-time heating jobs. They are too expensive to operate.

JA:mt

351.823
E13e

MONTANA ENERGY ADVISORY COUNCIL
STATE CAPITOL
HELENA, MT 59601

BILL CHRISTIANSEN, CHAIRMAN

STATE DOCUMENTS
DEC 3 1975

December 1, 1975

MONTHLY ENERGY STATUS REPORT

FEA Demand Watch 1/

Demand for all petroleum products for the four weeks ending November 7 averaged 15.94 million barrels per day, 9.4 percent below the same period in 1974, the Federal Energy Administration announced on November 17. This level of demand was 10.2 percent below the comparable four-week period in 1974.

Motor gasoline demand was at virtually the same level as in 1974 and was 1.8 percent above the 1973 level. Residual fuel oil demand, however, was down 21.7 percent from 1974 and 23.5 percent from 1973. Demand for distillate was off 8.6 percent from 1974 and was 11.6 percent lower than in 1973.

Demand for Petroleum Products
(Thousands of Barrels Per Day)

	Four Weeks Ending				
Product	Nov. 7 '75	Nov. 8 '74	Nov. 9 '73	% Chg 75/74	% Chg 75/73
Total Demand	15,942	17,599	17,744	- 9.4	-10.2
Motor Gasoline	6,667	6,639	6,546	+ 0.4	+ 1.8
Residual	2,237	2,858	2,925	-21.7	-23.5
Distillate	2,654	2,905	3,003	- 8.6	-11.6
Other Products	4,384	5,197	5,270	-15.6	-16.8

NOTE: FEA defines "demand" as "disappearance from primary supply". This is output from refineries plus net imports (imports minus exports) plus or minus changes in primary stocks. Primary stocks include storage facilities over 50,000 barrels. FEA calculations are based on weekly data from API and other sources.

1/ *Federal Energy News*, November 17, 1975.

FEA publishes demand figures on a weekly basis.

Manure Methane To Flow[2]

An FPC law judge has authorized the transport of methane produced from feedlot manure, intermingled with natural gas, by Natural Gas Pipe Company of America. The rate of $1.33 per million cubic feet was approved for up to 3.5 mmcf. of methane to be produced daily by a company called Calorific Recovery Anerobic Process, Inc. (CRAP) at facilities to be built near feedlots at Hooker, Oklahoma.

Highlights Of The Natural Gas Curtailments Meeting With State Energy Advisors [3]

Those in attendance were the state energy officials and other representatives of those states expected to be heavily impacted by natural gas curtailments, federal energy officials, and FEA regional representatives of the Natural Gas Task Force. The state energy people gave us information on the impact of curtailment in their respective states.

Generally, the impression which was received was that while the situation in these states is far from good, it is not as bad as originally expected. The mild fall weather has had much to do with this slightly improved situation. Of course, that familiar "if" is always there in the background. If we have a severe winter, the situation would deteriorate rapidly. There are estimates in case of a harsh winter of 120,000 people unemployed because of industrial curtailment in New York State. The Ohio representative stated that there would be 300,000 people laid off in case of heavy, cold-weather curtailment in that state. (FEA estimates for Ohio are closer to 50,000 unemployed.) Pennsylvania unemployment could be 7,000; South Carolina 60,000; North Carolina 71,000. These figures sound like something out of a bad dream compared to the worst that we could expect in any of the states in Region VIII. The economic impact outlook for Region VIII is good compared with these other states in the event of heavy curtailment.

Percentage figures for curtailment on some of these impacted states are as follows: Tennessee 32 percent (some parts of the state could have 50 percent; Virginia 21 percent;

2/ WGRLPO Report To The Governors, October 28, 1975.
3/ Federal Energy Administration, November 14, 1975.

North Carolina 55 percent (all of North Carolina's interruptibles are curtailed as of now); Arizona 35 percent (FEA estimates for Arizona 28 percent). It was pointed out by the representative from Arizona that some parts of Arizona are colder and get more snow than the New England states.

Gorman Smith, FEA, Assistant Administrator for the Operation of Regulatory Programs, gave the following additional information. We are entering the present heating system with a more favorable outlook in relation to propane than the national outlook of last year. The nation has in storage 90 million barrels of propane. This storage situation is due to a good off-season buildup and the warm fall weather. In fact, if our good luck continues weather wise, four of the states now on the list of heavy impact states in relation to propane will be removed from that list. These states are Arizona, Kentucky, Ohio, and Virginia.

Butane storage figures show a 20 percent increase over last heating season.

Mr. Smith cautioned that next year propane production will not only be down from the present year, but there will also be an increase in prices.

It was conceded generally among the state energy advisors that voluntary conservation, for the most part, does not work. Many people no longer believe that we are faced with fuel and energy shortages, and those that do, are skeptical of conservation programs. A typical question asked is: "Why should I turn my thermostat down to 68° in the daytime and 60° at night?" "Why should I save on natural gas when it will probably be transported elsewhere?" "Why should I conserve when the gas I save will probably be used by someone who doesn't use conservation measures?" "There is no guarantee that the gas saved in an area will remain in an area to be used by an impacted industry."

Advertising might overcome this consumer skepticism to a certain degree and, taking that possibility into consideration, the Federal Energy Administration has taken some measures. It has contracted with the Grey Advertising Agency of New York City to create a series of spot announcements on TV, radio, and newspaper ads on natural gas conservation practices.

Energy Patterns[4/]

Every household in America paid out $55 for imported oil

[4/] Arizona Energy Patterns, October and November 1975.

in 1970. In 1974 the cost was $400 per household. By 1977, the cost could be $500 and we could be depending on imported oil for more than 40 percent of our petroleum needs. If spending $1 million an hour for oil imports spells crises, what does the ten percent increase in OPEC prices mean in jobs, employment independence, cost?

A report of a new fuel mixture using sugar cane and cornstalks, which could save 100 million gallons of gasoline a day, has been released. A mixture, 45 percent unleaded gas, water, crude alcohols and a special chemical were combined to provide 14.2 miles to the gallon during a trip from New York to Washington. The crude alcohol comes from the sugar cane and cornstalks and since the mixture is only 45 percent gasoline, the researcher estimates "conservatively", 33 percent potential savings of the 300 million gallons of gasoline used daily.

The Energy Research and Development Administration has awarded two contracts to help reestablish native plants on strip mined land in Montana. The University of Montana and Montana State University are to experiment with the proper time and method to collect, handle and replant seeds of the indigenous short grasses, plants and shrubs in the mined areas. The work is also being supported by the U. S. Forest Service.

Shortages of 31 basic metals loom as a future possibility. Copper, cobalt, chromium, lead, aluminum, nickel and magnesium top the list. The reason springs from the best of motives, ecology and conservation. Multiple congressional agencies, unaware of each others activities, keep withdrawing federal lands from possible commercial use. Presently, an area equal to the area of all states east of the Mississippi, with the exception of Maine, is off limits. That's some 500 million acres, 67 percent of all federal lands.

An estimated 500 homes in New England may convert to combination solar-oil heating plants following the test year of a program sponsored by The New England Fuel Institute. The institute is raising $50,000 to equip seven or eight homes with different systems for the test. About 65 to 70 percent of the heat would be supplied by oil. New England, which has five percent of the nation's population, is heavily dependent on imported fuel oil and is making a move for a degree of self-sufficiency.

American technology know-how is pumping most of the world's oil, but not at home. U. S. technology and capital turned the North Sea into a major oil center. Five to eight thousand feet is about the limit of Russian ability. They need United States rigs to get down to 20,000 feet or more for efficient exploration. The African desert is spotted with American companies, as is true in portions of South America and Asia, including Japan.

Thirty percent of the nation's heating and cooling in 25 years could be by solar energy, so says the House Small Business Committee, if the government would push it harder. A presidential commission recommended solar development in 1952. If that report had been heeded, we could today be saving some three million barrels of oil a day and that is about half of current imports.

Worth thinking about is the fact that a 50 percent decrease in profits has the same dollar value as a 100 percent increase in profits. An increase from $5 million to $10 million is 100 percent profit, a decline from $10 million to $5 million is a 50 percent decline, a decrease of 100 percent would reduce profits to zero. Conservation of five gallons of gasoline is a ten gallon savings in production requirements. Why? Five gallons saved is already there, reducing production requirements by five gallons, makes a total of ten gallons.

Energy Saving Tips Of The Day

-- Make sure your heat and/or cooling ducts are air tight.

-- Close the damper on your chimney when not in use. Otherwise, you could be losing valuable heat.

-- If your water heater has a vacation setting, use it. The pilot light will burn without igniting the burner to keep the water hot when no one is home.

-- Don't rely upon portable electric heaters to do full-time heating jobs. They are too expensive to operate.

-- Favor a chest freezer over an upright freezer since the cold air in a chest type will not escape as quickly as it will in an upright freezer when the door is opened.

-- Thaw frozen foods before cooking when practical.

-- By turning your electric range off just before your cooking is over, you can use residual heat to finish the job and keep food warm before serving.

JA/mt